

Central



2012

Annual Water Quality Report for Central Water System Continuing Our Commitment

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Yes! Your water is safe to drink!

The James City Service Authority (JCSA) provides safe water to enhance and sustain the County residential and business community. The JCSA manages the County's Central Water System as well as seven independent community water systems. Our goal is to furnish you with the best possible water at the lowest possible cost. We continually surpass all State and Federal health and safety standards. As our customers, we are pleased to provide you with this annual water quality report for calendar year 2012.

As part of the James City County government, the JCSA was created to acquire, construct, operate, and maintain an integrated water system in designated areas of the County. The JCSA is governed by a Board of Directors which holds hearings on budget and other financial matters, approves contracts, and approves changes to Regulations Governing Utility Service. The Board of Directors' meets on the fourth Tuesday of each month at 7 p.m. in the Building F Board Room, James City County Government Center, 101 Mounts Bay Road. These meetings are televised live on JCC TV's Channel 48, the local government access channel, or available on demand at jamestownva.gov. Upcoming meeting agendas may be requested online or by calling 757-253-6805.

Water System Improvements

The JCSA has completed construction of several water lines, water storage and water production improvement projects that will result in additional water distribution capacity as well as water production capacities for our water system. Replacement of the waterlines in Indigo Dam Road and along Jamestown Road from Ironbound Road to the entrance of the Lakeview neighborhood are currently under construction and will be complete in 2013. Improvements to the Ironbound Road Water Storage Facility and Stonehouse Water Production Facility were completed in 2011 along with the installation of a major water transmission line on Longhill Connector Road followed by a second phase of improvements to Ironbound Road from Ironbound Road to Monticello Avenue. Water distribution system upgrades for College Creek were completed in 2010. Construction on a 5 million gallon per day groundwater treatment facility was completed early 2005 in the Five Forks area of the County. Water line improvements for the First Colony area were completed in late 2006. To enhance water storage and fire protection capabilities, two 1.25 million gallon elevated storage tanks were constructed and put in service in late 2007.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as people with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Call the Safe Drinking Water Hotline (800-426-4791) for guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other micro-biological contaminants.

Where Does My Water Come From?

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Substances (referred to as contaminants) in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

The Central Water System consists of the Five Forks Water Treatment Facility (FFWTF) and nine water production

facilities located throughout the County. Each facility has storage tanks, booster pumps, distribution system and appurtenances. The majority of the system wells pump water from the Chickahominy-Piney Point Aquifer at a depth of 250-300 feet. Five wells that take water from the Potomac Aquifer are at a depth of 300-836 feet. The FFWTF takes water from the Middle and Lower Potomac Aquifers that range in depth from 800-1200 feet. During 2012 the well system produced an average of 4.7 million gallons per day (mgd) for 20,294 residential and business connections. Current Central System design capacity is 9.48 mgd.

Source Water Assessment

The Virginia Department of Health conducted a Source Water Assessment of the Central System in 2001. Some wells were determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. The assessment report consists of maps showing the source Water Assessment area, an inventory of known Land Use Activities and Potential Sources of contamination, susceptibility Explanation Chart, and Definitions of Key Terms. To obtain a copy of the Source Water Assessment Report, call the JCSA Utility Operations Division at 757-229-7421.

Water Treatment Process

The JCSA is fortunate to already have high quality water coming from all aquifers. While the water is safe, we provide a disinfectant in accordance with Federal regulations before the water enters the distribution system for consumption. At the FFWTF, a different treatment process known as reverse osmosis (R.O.) is utilized. This process removes salts from the water before additional finished water chemical adjustments are made for pH and corrosion. Once the chemistry of the water has been adjusted and tested, the finished water is distributed to the system. The Central Water System disinfection process includes the injection of a liquid hypochlorite solution at nine water production facilities and the FFWTF. These ten injection sites chlorinate all wells and provide sufficient disinfection for the entire system. Chlorine residual tests are routinely taken to ensure the water system is thoroughly disinfected.

Contaminants that Could Be in Water

All drinking water, including bottled water, may contain small or trace amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Contaminants that may be present in source water include: microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; organic chemical and contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Additional Health Information

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The JCSA is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 15 to 30 seconds or until it becomes cold or reaches a steady temperature before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at epa.gov/safewater/lead.

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Unregulated Contaminants

In 2008 the JCSA participated in an EPA required monitoring program to test for 10 unregulated contaminants at all water entry points. The purpose of the program was to provide data to support the EPA's Administrator's decision concerning whether or not to regulate these contaminants in the future for the protection of public health. The JCSA is happy to report that all results were below the detection limit. Additional information about the results is available to the public by calling the JCSA Utility Operations Division at 757-229-7421.

Sampling Results

The JCSA tests for more than 100 contaminants to make sure the water you drink is safe. We are pleased to report that for calendar year 2012, the water delivered to your homes and businesses complied with all State and Federal requirements. The following regulated contaminants test results indicate samples with low level concentrations of total trihalomethanes, Haloacetic Acids, gross alpha, and gross beta that are below allowed levels which means our drinking water is safe to drink and poses no health risk. Not listed are many of the other contaminants for which we tested that were not detected.

Naturally Occurring Bacteria

In 2012, 603 routine bacteriological and chlorine residual samples were taken from the distribution system. 602 samples were negative (absent) for both total and fecal Coliform. One sample was total Coliform positive in August 2012, but all repeat samples were negative.

Questions

For more information about this report, or for any questions relating to your drinking water:

General Manager	Customer Service	Emergency, normal hours	Emergency, after hours	Special Information Hotline	Water Conservation
757-253-6805	757-253-6800	7 a.m. - 4:30 p.m. 757-229-7421	757-566-0112	757-259-4911	757-253-6859 jamescitycountyva.gov/bewaterSMART

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Regulated Contaminants

Contaminant (units)	Violation	Range	Level Detected	MCL	MCLG	Date of Sample	Potential Source of Contaminant
Total Trilohomethanes (ppb)	No	1.8-22	8*	80	0	July 9, 2012	By-product of drinking water chlorination
Combined Radium (pCi/l)	No	ND-1.4	1.4	5	0	2008-2012	Erosion of natural deposits
Gross Alpha (pCi/l)	No	ND-1.0	1.0	15	0	2008-2012	Erosion of natural deposits
Gross Beta (pCi/l)	No	2.8-9.4	9.4	50**	0	2008-2012	Decay of natural and man-made deposits
Lead (ppb)	No	ND-2	2***	AL = 15	0	2012	Corrosion of household plumbing systems, erosion of natural deposits
Copper (ppm)	No	0.008-0.178	0.178***	AL = 1.3	1.3	2012	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives
Haloacetic Acids (5) (ppb)	No	ND-2.2	2.2*	60	0	July 19, 2012	By-product of drinking water chlorination
Free Chlorine (ppm)	No	0.94-2.20	1.50	MRDL 4	MRDLG 4	2012 monthly	Water chlorination
Xylenes (ppm)	No	ND-0.0045	0.0045	10	10	June 12, 2012	Discharge from petroleum refineries
Ethylbenzene (ppb)	No	ND-1.1	1.1	700	700	June 12, 2012	Discharge from petroleum refineries
Flouride (ppm)	No	0.56-2.00	2.00	4	4	2011	Erosion of natural deposits
Total Coliform	No	ND-1	1			August 2012	Naturally present in the environment

* Highest annual average of any sampling point/Annual average of all samples.

** The MCL for Beta particles is 4 mrem/year, but EPA considers 50 pCi/l to be the level of concern.

*** Level found is the 90th percentile of the sampling pool.

Table Definitions

AL (Action Level): the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water.

MRDLG (Maximum Residual Disinfectant Level Goal):

The highest level of a disinfectant added to which no anticipated adverse effects would occur.

ppm (one part per million): the equivalent of a single penny in \$10,000.

ppb (one part per billion): the equivalent of a single penny in \$10,000,000.

pCi/l (picocuries per liter): a measure of radioactivity.

NA: Not Applicable.

NR: Not Regulated but monitoring required.

ND (No Detects): lab analysis indicates that the contaminant is not present.